

WHAT IS CLAIMED IS:

1                   1. A biopsy localization device comprising:  
2                   a bioabsorbable element in a pre-delivery state prior to its delivery to a soft  
3                   tissue biopsy site of a patient; and  
4                   said bioabsorbable element being of a material which is in a post-delivery  
5                   state at the biopsy site, the bioabsorbable element being palpably harder than the  
6                   surrounding soft tissue at the biopsy site when in the post-delivery state.

1                   2. The device according to claim 1 further comprising a delivery  
2                   device for delivering the bioabsorbable element in the pre-delivery state to a soft tissue  
3                   biopsy site.

1                   3. The device according to claim 1 wherein the bioabsorbable element  
2                   is of a different hardness in the post-delivery state as in the pre-delivery state.

1                   4. The device according to claim 1 wherein the bioabsorbable element  
2                   has a hardness of at least about 1.5 times as hard as breast tissue in the post-delivery state.

1                   5. The device according to claim 1 wherein the bioabsorbable element  
2                   swells about 50 to 1500 percent from the pre-delivery state to the post-delivery state when  
3                   placed in contact with an aqueous liquid.

1                   6. The device according to claim 1 wherein the bioabsorbable element  
2                   has a first shape in the pre-delivery state and a second shape in the post-delivery state.

1                   7. The device according to claim 1 wherein the bioabsorbable element  
2                   has one consistency in the pre-delivery state and a different consistency in the post-  
3                   delivery state.

1                   8. The device according to claim 1 wherein the bioabsorbable element  
2                   has a longest dimension of at least about 0.5cm when in the post-delivery state.

1                   9. The device according to claim 1 wherein the bioabsorbable element  
2                   made of collagen.

1                   10. The device according to claim 1 wherein the bioabsorbable element  
2                   comprises a therapeutic agent.

1           11.    The device according to claim 10 wherein the therapeutic agent  
2    comprises at least a chosen one of a chemotherapeutic agent, a radiation agent and a gene  
3    therapy agent.

1           12.    The device according to claim 1 wherein the bioabsorbable element  
2    comprises reservoir means for subsequently receiving a therapeutic agent.

1           13.    The device according to claim 12 wherein the reservoir means  
2    comprises reservoir means for receiving a chemotherapy agent.

1           14.    The device according to claim 1 wherein the bioabsorbable element  
2    comprises a hemostatic agent.

1           15.    The device according to claim 1 wherein the bioabsorbable element  
2    comprises at least one of the following materials: polyactic and polyglycolic acids,  
3    polyorthoesters, resorbable silicones and urethanes, lipids, collagens, polysaccharides,  
4    starches, ceramics, polyamino acids, proteins, hydrogels and other gels, gelatins,  
5    polymers and cellulose.

1           16.    The device according to claim 1 wherein the bioabsorbable element  
2    changes from the pre-delivery state to the post-delivery state upon contact with an  
3    aqueous environment.

1           17.    The device according to claim 1 wherein the bioabsorbable element  
2    is physically different in its pre-delivery state than in its post-delivery state.

1           18.    The device according to claim 1 wherein the bioabsorbable element  
2    comprises a bioabsorbable filament.

1           19.    The device according to claim 1 further comprising a marker  
2    element located generally centrally within the bioabsorbable element.

1           20.    The device according to claim 19 wherein the marker element is a  
2    radiopaque marker element.

1           21.    The device according to claim 19 wherein said marker element  
2    comprises a chosen one of a permanent marker element and a temporary marker element.

1                   22. A biopsy localization method comprising:  
2                   taking a tissue sample from a biopsy site within a patient;  
3                   positioning a bioabsorbable element at the biopsy site at the time of the  
4                   taking of the tissue sample;  
5                   testing the tissue sample; and  
6                   if the testing indicates a need to do so relocating the biopsy site by finding  
7                   the bioabsorbable element.

1                   23. The method according to claim 22 wherein the positioning step is  
2                   carried out using said bioabsorbable element and a radiopaque marker.

1                   24. The method according to claim 23 wherein the relocating step is  
2                   carried out using a radiographic technique.

1                   25. The method according to claim 23 wherein the positioning step is  
2                   carried out using a chosen one of a permanent radiopaque marker and a temporary  
3                   radiopaque marker.

1                   26. The method according to claim 22 wherein the relocating step is  
2                   carried out by at least one of:  
3                   palpation of the patient to feel the bioabsorbable element;  
4                   locating inflammation at the biopsy site caused by the bioabsorbable  
5                   element;  
6                   following a bioabsorbable thread, the thread extending from the patient's  
7                   skin to the bioabsorbable element; and  
8                   remotely visualizing the bioabsorbable element.

1                   27. The method according to claim 26 wherein the remotely  
2                   visualizing step is carried out by at least a chosen one of ultrasound, MRI and  
3                   mammography.

1                   28. The method according to claim 22 wherein the tissue sample taking  
2                   step is carried out using a needle biopsy technique.

1                   29. The method according to claim 22 wherein the tissue sample taking  
2                   step is carried out using a surgical excisional biopsy technique.

1                   30.    The method according to claim 22 wherein the tissue sample taking  
2    step is carried out within a soft tissue.

1                   31.    The method according to claim 22 further comprising the step of  
2    selecting the bioabsorbable element so that after positioning at the target site, the  
3    bioabsorbable element has a hardness of at least about 1.5 times as hard as the  
4    surrounding tissue.

1                   32.    The method according to claim 22 further comprising selecting a  
2    hemostatic bioabsorbable element and providing hemostasis at the target site by the  
3    hemostatic bioabsorbable element.

1                   33.    The method according to claim 32 wherein the hemostasis  
2    providing step is provided by at least one of mechanical or chemical hemostatic  
3    techniques.

1                   34.    The method according to claim 32 further comprising the step of  
2    effectively preventing blood from contacting the hemostatic bioabsorbable element until  
3    the hemostatic bioabsorbable element is positioned at the target site.

1                   35.    The method according to claim 34 wherein the effectively  
2    preventing step is carried out using a hemostatic bioabsorbable element having a non-  
3    hemostatic degradable outer layer so the hemostasis providing step is a time-delayed  
4    hemostasis providing step.

1                   36.    The method according to claim 34 wherein the effectively  
2    preventing step includes the step of physically isolating the hemostatic bioabsorbable  
3    element from contact with blood until it is at the biopsy site.

1                   37.    The method according to claim 22 wherein the bioabsorbable  
2    element positioning step is carried out by at least one of:  
3                    injecting a flowable bioabsorbable element through a hollow member;  
4                    pushing a nonflowable bioabsorbable element through a hollow member;  
5    and  
6                    guiding a solid bioabsorbable element to the target site.

1                   38. The method according to claim 37 wherein the flowable  
2 bioabsorbable element injecting step is carried out using a biopsy needle.

1                   39. The method according to claim 22 further comprising the step of  
2 changing the bioabsorbable element from a pre-delivery state prior to the positioning step  
3 to a post-delivery state after the positioning step.

1                   40. The method according to claim 39 wherein the changing step is  
2 carried out by at least one of the following: hydration, changing temperature, electrical  
3 stimulation, magnetic stimulation, chemical reaction with a first additional material,  
4 physical interaction with a second additional material, ionization, absorption and  
5 adsorption.

1                   41. The method according to claim 27 further comprising the step of  
2 placing a marker element at a generally central location within the bioabsorbable element  
3 at the target site.

1                   42. The method according to claim 41 wherein the placing step takes  
2 place simultaneously with the positioning step.

1                   43. The method according to claim 41 wherein the placing step is  
2 carried out using a radiopaque marker element.

1                   44. The method according to claim 41 wherein the biopsy site  
2 relocating step comprises the step of remotely visualizing the marker element.

1                   45. A medical treatment method comprising:  
2                   taking a tissue sample from a biopsy site within a patient;  
3                   positioning a bioabsorbable element at the biopsy site at the time of the  
4 taking of the tissue sample;  
5                   testing the tissue sample;  
6                   if the testing indicates a need to do so, and medically treating the biopsy  
7 site.

1                   46. The method according to claim 45 wherein the medically treating  
2 step comprises activating an agent carried by the bioabsorbable element.

1           47. The method according to claim 46 wherein the activating step is  
2 carried out by at least one of:

3           injecting a radiation-emitting element at the vicinity of the target site;  
4           externally irradiating the target site; and  
5           providing a triggering substance to the agent.

1           48. The method according to claim 45 wherein the medically treating  
2 step comprises delivering a therapeutic agent to the target site.

1           49. The method according to claim 48 wherein the delivering step is  
2 carried out using at least one of:

3           a chemotherapy agent;  
4           a radiation-emitting element;  
5           thermal energy;  
6           ionization energy;  
7           gene therapy;  
8           vector therapy;  
9           electrical therapy;  
10          vibrational therapy; and  
11          anti-angiogenesis.

1           50. The method according to claim 45 further comprising the step of  
2 relocating the biopsy by finding the bioabsorbable element.

1           51. The method according to claim 50 wherein the relocating step is  
2 carried out prior to the medically treating step.

1           52. The method according to claim 51 wherein the medical treating  
2 step comprises removal of tissue.

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